



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/589,705	02/12/2007	Xavier Muyldermans	L0010/US	9509

30522 7590 03/17/2010  
KRATON POLYMERS U.S. LLC  
16400 Park Row  
HOUSTON, TX 77084

EXAMINER
----------

KRYLOVA, IRINA

ART UNIT	PAPER NUMBER
----------	--------------

1796

NOTIFICATION DATE	DELIVERY MODE
-------------------	---------------

03/17/2010

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

kratonip@kraton.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/589,705	<b>Applicant(s)</b> MUYLDERMANS ET AL.	
	<b>Examiner</b> Irina Krylova	<b>Art Unit</b> 1796	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 December 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 13-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 13-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                    | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### *Response to Amendment*

1. The amendment filed by Applicant on December 21, 2009 has been fully considered. The amendment to claims 13, 25 and 26 is acknowledged. Specifically, claim 13 has been amended to include a limitation of the block B being a polymerized conjugated diene of polybutadiene. This limitation was taken from the original claim 15. In light of the amendment filed by Applicant on December 21, 2009 a rejection under 35 USC 112, a rejection of claims 13-25 under 35 USC 103(a) as being unpatentable over **Mariotti et al** (IT 1,317,261) in view of **Diehl et al** (US 5,358,783), **Kolarik** (Polymer, 47, 2006, 346-356), and a rejection of claims 13-25 under 35 U.S.C. 103(a) as being unpatentable over **Gergen** (US 3,865,776) in view of **Burnell** (US 5,272,182) and **Mariotti et al** (IT 1,317,261), are withdrawn. All other rejections are maintained. The following action is properly made final.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 1796

**2. Claims 13-25** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Mariotti et al** (IT 1,317,261) in view of **Nakagawa et al** (US 2004/0143061), as evidenced by **Kolarik** (Polymer, 47, 2006, 346-356).

The rejection is adequately set forth on pages 9-12 of an Office Action mailed on September 21, 2009 and is incorporated here by reference.

**3. Claims 13-25** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Himes et al** (US 4,880,878) in view of **Leicht** (US 4,764,535) and **Mariotti et al** (IT 1,317,261).

The rejection is adequately set forth on pages 12-18 of an Office Action mailed on September 21, 2009 and is incorporated here by reference.

**4. Claims 13-25** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Himes et al** (US 4,880,878) in view of **Burnell** (US 5,272,182) and **Mariotti et al** (IT 1,317,261).

The rejection is adequately set forth on pages 18-22 of an Office Action mailed on September 21, 2009 and is incorporated here by reference.

Art Unit: 1796

**5. Claim 26** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Burnell** (US 5,272,182) in view of **Himes et al** (US 4,880,878).

The rejection is adequately set forth on pages 22-24 of an Office Action mailed on September 21, 2009 and is incorporated here by reference.

### ***Response to Arguments***

6. Applicant's arguments filed on December 21, 2009 have been fully considered.

It is noted that the rejection of claims 13-25 under 35 USC 103(a) as being unpatentable over **Mariotti et al** (IT 1,317,261) in view of **Diehl et al** (US 5,358,783), **Kolarik** (Polymer, 47, 2006, 346-356) and a rejection of claims 13-25 under 35 U.S.C. 103(a) as being unpatentable over **Gergen** (US 3,865,776) in view of **Burnell** (US 5,272,182) and **Mariotti et al** (IT 1,317,261) are withdrawn, thus rendering Applicant's arguments moot.

7. Regarding the rejection of claims 13-25 under 35 U.S.C. 103(a) as being unpatentable over **Mariotti et al** (IT 1,317,261) in view of **Nakagawa et al** (US 2004/0143061), **Kolarik** (Polymer, 47, 2006, 346-356), Applicant argues that **Nakagawa et al** relates to polyphenylene ether composition and there is no basis that high and low molecular weight block copolymers of **Nakagawa et al** would yield excellent surface appearance and impact strength in the production of polypropylene composition of **Mariotti et al**.

8. Examiner disagrees.

1) **Mariotti et al** discloses a foamed thermoplastic elastomeric material comprising: a mixture of high molecular weight thermoplastic elastomer comprising styrene-butadiene-styrene block copolymer and a medium molecular weight thermoplastic elastomer comprising styrene-butadiene-styrene block copolymer; further blended with a crystalline polypropylene homopolymer; a paraffinic oil; and a nucleating agent; but fails to specify the ratio between the high molecular weight thermoplastic elastomer block copolymer and a medium molecular weight thermoplastic elastomer block copolymer.

2) Furthermore, **Nakagawa et al** teaches that when only low molecular weight block copolymer or only high molecular weight block copolymer are used in a thermoplastic composition, high impact strength and decrease in generation of foreign matter at the time of production, cannot be attained ([0082]). Therefore, it would have been obvious to a one of ordinary skill in the art that a combination of LMW block copolymer and HMW block copolymer is important for improved tensile strength of the resulting composition, thus confirming the teachings of **Mariotti et al**. Since the physical properties of the composition, including tensile strength, depend on relative proportion of LMW block copolymer and HMW block copolymer, such limitation as relative proportion of the LMW block copolymer and HMW block copolymer becomes a result effective variable, therefore, it would have been obvious to one skilled in the art at the time of the invention was made, to make variations in the content of LMW block

Art Unit: 1796

copolymer and HMW block copolymer to obtain the desired combination of physical properties, including tensile strength and surface appearance. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980) (MPEP 2144.05 II).

Therefore, it would have been obvious to a one of ordinary skill in the art at the time of the invention was made to include the combination of LMW block copolymer and HMW block copolymer of **Nakagawa et al** into the composition of **Mariotti et al** to ensure the composition of **Mariotti et al** comprises high impact strength as well ([0082] in **Nakagawa et al**).

3) Though the thermoplastic resin composition comprises a polyphenylene ether, nevertheless, **Nakagawa et al** is a secondary reference which was chosen to further show that the combination of LMW and MMW block copolymers is important for improving the tensile strength of the thermoplastic composition. Secondary reference does not need to teach all limitations. "It is not necessary to be able to bodily incorporate the secondary reference into the primary reference in order to make the combination." *In re Nievelt*, 179 USPQ 224 (CCPA 1973).

9. Regarding the rejection of claims 13-25 under 35 U.S.C. 103(a) as being unpatentable over **Himes et al** (US 4,880,878) in view of **Leicht** (US 4,764,535) and **Mariotti et al** (IT 1,317,261), Applicant argues that **Himes et al** pertains to copolymer blends with improved oil absorption resistance, whereas **Leicht** and **Mariotti et al** are concerned with foam compositions and there is no way one of ordinary skill in the art

Art Unit: 1796

can modify **Himes et al** without destroying its use as a copolymer blend that has oil absorption resistance.

10. Examiner disagrees.

**Himes et al** discloses a thermoplastic blend comprising two block copolymers of the formula ABA, wherein the block A comprises a styrene polymer and block B comprises a butadiene polymer; a polypropylene, and a paraffinic oil, wherein the composition comprises not only oil absorption resistance, but improved tensile strength as well (col. 2, lines 64-68). Though **Himes et al** does not specify the composition as being a foamable, and therefore, does not specify the composition further comprising a nucleating agent and a blowing agent; however, since a) **Himes et al** discloses a thermoplastic composition having improved tensile strength; b) addition of blowing agent to thermoplastic composition will make it foamable; c) **Mariotti et al** discloses a foamable composition also comprising a mixture of LMW and HMW block copolymers; further blended with polypropylene, similar to the composition of **Himes et al**, but further comprising a blowing agent to produce a foam, therefore, it would have been obvious to a one of ordinary skill in the art at the time of the invention was made to combine teachings of **Himes et al** and **Mariotti et al** to arrive at a thermoplastic composition that has a good impact strength but also being foamable, so to produce foamed articles having improved tensile strength.



Art Unit: 1796

11. Regarding the rejection of claims 13-25 under 35 U.S.C. 103(a) as being unpatentable over **Himes et al** (US 4,880,878) in view of **Burnell** (US 5,272,182) and **Mariotti et al** (IT 1,317,261), Applicant argues that a) **Himes et al** pertains to copolymer blends with improved oil absorption resistance and there is no way one of ordinary skill in the art can modify **Himes et al** without destroying its use as a copolymer blend that has oil absorption resistance and b) not all products under Kraton trademark or Moplen trademark have the same or similar properties, though Examiner stated a “substitution of an equivalent”.

12. Examiner disagrees.

1) **Himes et al** discloses a thermoplastic blend comprising two block copolymers of the formula ABA, wherein the block A comprises a styrene polymer and block B comprises a butadiene polymer; a polypropylene, and a paraffinic oil, wherein the composition comprises not only oil absorption resistance, but improved tensile strength as well (col. 2, lines 64-68). Though **Himes et al** does not specify the composition as being a foamable, and therefore, does not specify the composition further comprising a nucleating agent and a blowing agent; however, since a) **Himes et al** discloses a thermoplastic composition having improved tensile strength; b) addition of blowing agent to thermoplastic composition will make it foamable; c) **Mariotti et al** discloses a foamable composition also comprising a mixture of LMW and HMW block copolymers; further blended with polypropylene, similar to the composition of **Himes et al**, but further comprising a blowing agent to produce a foam, d) **Burnell** discloses a composition

Art Unit: 1796

comprising a triblock styrene-diene-styrene copolymer, an extending oil, and 0.1-3%wt of a blowing agent comprising sodium bicarbonate-acid combination and nucleating agents, therefore, it would have been obvious to a one of ordinary skill in the art at the time of the invention was made to combine teachings of **Himes et al** and **Mariotti et al** and **Burnell** to arrive at a thermoplastic composition that has a good impact strength but also being foamable, so to produce foamed articles having improved tensile strength.

2) Commercially available products under a trademark Kraton G are a family of styrene block copolymers having different content of styrene and specific properties, including different viscosity, melt flow, etc. Therefore, it would have been obvious to a skilled artisan to choose the specific product from the family of Kraton G products according to particular needs. Case law holds that the selection of a known material based on its suitability for its intended use supports prima facie obviousness. *Sinclair & Carroll Co vs. Interchemical Corp.*, 325 US 327, 65 USPQ 297 (1045). The same arguments are also pertinent to the family of propylene polymers commercially available under a trademark Moplen.

13. Regarding the rejection of claim 26 under 35 U.S.C. 103(a) as being unpatentable over **Burnell** (US 5,272,182) in view of **Himes et al** (US 4,880,878), Applicant argues that **Burnell** relates to foam compositions whereas **Himes et al** does not mention foam composition, therefore, references cannot be combined as they are not analogous art, their use is not the same; and further there is no hint that substituting the styrene block

Art Unit: 1796

copolymers of **Himes et al** for those in **Burnell** will be a foamable composition, except using hindsight with the present disclosure.

14. Examiner disagrees.

**Burnell** discloses a preblend comprising a styrene-diene-styrene triblock copolymer having a molecular weight in the range of 100,000-350,000 and a hydrocarbon extending oil, to be used in a blowing agent concentrate. The concentrate comprises the preblend and further a blowing agent (Abstract), and is utilized to prepare foamable materials (Abstract). Therefore, preblend is not a foam composition per se, but just a combination of ingredients for further making the foam. **Himes et al** discloses a similar composition comprising a blend of commercially available block copolymer Kraton G 1657 (which is a styrene-diene-styrene block copolymer as well) with paraffinic oil (see Table 3), i.e. appears to be a preblend of the same ingredients as the preblend of **Burnell**. Though the uses of the preblend as cited in **Burnell** and **Himes et al** are different, nevertheless, the compositions of the preblends of **Burnell** and **Himes et al** are identical and thus appear to be analogous art. Therefore, it would have been obvious to a one of ordinary skill in the art at the time of the invention was made to use the preblend of **Himes et al** as the preblend in the concentrate of **Burnell**, as it would be obvious to substitute one equivalent for another. Case law holds that the selection of a known material based on its suitability for its intended use supports prima facie obviousness. *Sinclair & Carroll Co vs. Interchemical Corp.*, 325 US 327, 65 USPQ 297 (1045). Case law holds that the mere substitution of

Art Unit: 1796

an equivalent (something equal in value or meaning, as taught by analogous prior art) is not an act of invention; where equivalency is known to the prior art, the substitution of one equivalent for another is not patentable. See *In re Ruff* 118 USPQ 343 (CCPA 1958).

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Irina Krylova whose telephone number is (571)270-7349. The examiner can normally be reached on Monday-Friday 7:30am-5pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasudevan Jagannathan can be reached on (571)272-1119. The fax phone

Art Unit: 1796

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Irina Krylova/  
Examiner, Art Unit 1796

/Vasu Jagannathan/  
Supervisory Patent Examiner, Art Unit 1796

Application/Control Number: 10/589,705  
Art Unit: 1796

Page 13